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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,595	07/29/2003	Yuichi Yagawa	16869B-064300US	1653

			EXAMINER

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EXAMINER
DWIVEDI, MAHESH H

ART UNIT	PAPER NUMBER
2168	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
	10/630,595	YAGAWA, YUICHI
Office Action Summary	Examiner	Art Unit	
	Mahesh H. Dwivedi	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 January 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-14 and 16-43</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-14 and 16-43</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>29 July 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114 including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Sine this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/30/2007 has been entered.

Remarks

2.   Receipt of Applicant's Amendment filed on 01/30/2007 is acknowledged. The amendment includes the amending of claims 1, 17, 27-28, 30-31, 33, and 41-42, and the cancellation of claim 15.

Claim Objections

3.   Claim 1 is objected to because of the following informalities: The phrase "an application system for providing queries to a database system" should be changed to "an application system for providing queries to the database system". Appropriate correction is required.

Claims 2-14, 16, and 21 are objected to for incorporating the deficiencies of independent claim 1.

Claim 16 is objected to because of the following informalities: The phrase "the database includes a hub system for system coupled to each" is incoherent. The examiner suggests that applicant amend dependent claim 16 to make is grammatically correct. Appropriate correction is required.

Claim 33 is objected to because of the following informalities: The examiner suggests that applicant amend independent claim 33 in order to recite a clear preamble and associative limitations. The examiner suggests that applicant look at independent claims 1 and 17 as a template for amending claim 33. The examiner further notes that it is unclear as to whether independent claim 33 is directed towards a method or a system. Appropriate correction is required.

Claims 34-37, and 39-40 are objected to for incorporating the deficiencies of independent claim 33.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5.   Claim 20 recites the limitation "the request path selector chooses a request path" in page 5. There is insufficient antecedent basis for this limitation in the claim, as independent claim 17 recites no request path selector.

Claim 21 recites the limitation "wherein when the request path is chosen to be the storage" in page 5. There is insufficient antecedent basis for this limitation in the claim, as independent claim 1 recites no request path.

Claim 38 recites the limitation "A method as in claim 28" in page 5. There is insufficient antecedent basis for this limitation in the claim, as independent claim 28 is directed towards a system.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7.   Claims 30, 33, and 37 are rejected under 35 U.S.C. 102(a) as being anticipated by **Harrow et al.** (U.S. PGPUB 2003/0009518).

8.   Regarding claim 30, **Harrow** teaches a system comprising:

A) a database system (Paragraph 39, Figure 5);

B) an application system for providing queries to a database system coupled to the application system via a first connection over a network (Paragraphs 33 and 39, Figure 5);

C) the application system including a database access system (Paragraphs 39 and 46, Figures 5 and 7); and

D) the database system including a gateway system (Paragraphs 39 and 46, Figures 5 and 7);

E) <u>a storage system having a volume to store results from queries made to the database system</u> (Paragraph 39, Figure 5);

F) <u>a first data path to provide a data connection between the storage system and the application system</u> (Paragraph 39, Figure 5);

G) <u>wherein the application system can directly access query results on the storage system without communicating via the first connection</u> (Paragraph 39, Figure 5);

H) <u>a second data path to provide a data connection between the storage system and the database system</u> (Paragraph 39, Figure 5);

I) <u>wherein the database system directly stores query results to the storage system via the second data path without communication via the first connection</u> (Paragraph 39, Figure 5);

J) the database access system including a request path selector for selecting a request path over which to return the results from queries made to the database system (Paragraph 39, Figure 5);

K) the request path selector selecting from among at least the first connection over the network or the <u>first data</u> path between the application system and the storage system (Paragraph 39, Figure 5).

The examiner notes that **Harrow** teaches **"a database system"** as "Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D" (Paragraph 39). The examiner further notes that **Harrow** teaches **"an application system for providing queries to a database system coupled to the application system via a first connection over a network"** as "Client A 404-A makes a file request 410 (via, for example, surfing the web) to directory server 402. Directory

server 402 looks to see where the file may be located on the local network 415 by referencing a prioritized list of closest clients with the latest version of the file" (Paragraph 33) and "Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D" (Paragraph 39). The examiner further notes that connection 510 in Figure 5 of **Harrow** clearly shows a first connection. The examiner further notes that **Harrow** teaches "**a storage system having a volume to store results from queries made to the database system**" as "A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible" (Paragraph 39). The examiner further notes that **Harrow** teaches "**a first data path to provide a data connection between the storage system and the application system**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client

D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 514 in Figure 5 of **Harrow** clearly shows a first data path between the storage (Client D) and the application system (Client P). The examiner further notes that **Harrow** teaches "**wherein the application system can directly access query results on the storage system without communicating via the first connection**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**a second data path to provide a data connection between the storage system and the database system**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and

so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 512 in Figure 5 of **Harrow** clearly shows a second data path between the storage (Client D) and the database system (Directory Server). The examiner further notes that **Harrow** teaches "**wherein the database system directly stores query results to the storage system via the second data path without communication via the first connection**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**the database access system including a request path selector for selecting a request path over which to return the results from queries made to the database system**" as "Here, Client P 504-P represents a portable client such as a portable computer or PDA. Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File

server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**the request path selector selecting from among at least the first connection over the network or the first data path between the application system and the storage system**" as "Here, Client P 504-P represents a portable client such as a portable computer or PDA. Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39).

Regarding claim 33, **Harrow** teaches a system comprising:
A) a query provider which provides queries to a database system connected to the query provider by a first connection over a network (Paragraph 33);

B) the query provider and the database system being each coupled to a storage
system via different paths (Paragraph 39, Figure 5);

C) a method of returning results to the query provider comprising storing results from
queries made to the database system in the storage system at an address which can be
accessed separately by the query provider via a second connection independent of the
network and by the database system via a third connection independent of the network
(Paragraph 39, Figure 5);

D) sending the address of the results in the storage system via the first connection over
the network to the query provider (Paragraph 39, Figure 5).

The examiner notes that **Harrow** teaches "**a query provider which provides
queries to a database system connected to the query provider by a first
connection over a network**" as "Client A 404-A makes a file request 410 (via, for
example, surfing the web) to directory server 402. Directory server 402 looks to see
where the file may be located on the local network 415 by referencing a prioritized list of
closest clients with the latest version of the file" (Paragraph 33). The examiner further
notes that **Harrow** teaches "**the query provider and the database system being
each coupled to a storage system via different paths**" as "Client P 504-P may need
a file from File Server 522. A request 510 to directory server 502 may indicate that there
is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point
Client P 504-P may decide to either stay online and download the file or direct that it be
downloaded to the nearest client. If the latter choice is selected, then the directory
server 502 may determine that Client D 504-D is the nearest client and direct that the
download of the file from File server 522 be directed to Client D 504-D" (Paragraph 39).
The examiner further notes that connection 510 in Figure 5 of **Harrow** clearly shows a
first connection. The examiner further notes that **Harrow** teaches "**a storage system
having a volume to store results from queries made to the database system**" as
"A request 510 to directory server 502 may indicate that there is no local copy on Client
A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide
to either stay online and download the file or direct that it be downloaded to the nearest
client. If the latter choice is selected, then the directory server 502 may determine that

Client D 504-D is the nearest client and direct that the download of the file from File
server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512)
may occur with Client P 504-P either presently connected to the network or
disconnected. When the file has been downloaded to Client D 504-D, the directory
server 502 has this information stored, and so when Client P 504-P again connects to
the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D
to Client P 504-P is possible" (Paragraph 39). The examiner further notes that **Harrow**
teaches **"a method of returning results to the query provider comprising storing
results from queries made to the database system in the storage system at an
address which can be accessed separately by the query provider <u>via a second
connection independent of the network</u> and by the database system <u>via a third
connection independent of the network</u>"** as "Client P 504-P represents a portable
client such as a portable computer or PDA. Client P 504-P may need a file from File
Server 522. A request 510 to directory server 502 may indicate that there is no local
copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P
504-P may decide to either stay online and download the file or direct that it be
downloaded to the nearest client. If the latter choice is selected, then the directory
server 502 may determine that Client D 504-D is the nearest client and direct that the
download of the file from File server 522 be directed to Client D 504-D. This transfer (via
522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to
the network or disconnected. When the file has been downloaded to Client D 504-D, the
directory server 502 has this information stored, and so when Client P 504-P again
connects to the network and requests the file, a local peer-to-peer transfer 514 from
Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-
peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically
when Client P 504-P is connected to the network and Client D 504-D has the file locally"
(Paragraph 39). The examiner further notes that connections 512 and 514 in Figure 5
of **Harrow** clearly shows a multiple independent connections and/or data paths. The
examiner further notes that **Harrow** teaches **"sending the address of the results <u>in
the storage system</u> via the first connection over the network to the query**

provider" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39).

Regarding claim 37, **Harrow** further teaches a method comprising:
A) wherein the query provider provides query data to the database by storing the query data in the storage system at a location and sending information about the location over the first connection to the database system (Paragraph 29, Figure 3).

The examiner notes that **Harrow** teaches **"wherein the query provider provides query data to the database by storing the query data in the storage system at a location and sending information about the location over the first connection to the database system"** as "Client B 304-B may then effect a peer-to-peer transfer with Client A 304-A. After this transfer, directory server 302 would then know that Client A 304-A, Client B 304-B, and Client D 304-D have a copy of the file" (Paragraph 29).

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 1-9, 16-21, 25-29, 31-32, 28, and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Harrow et al.** (U.S. PGPUB 2003/0009518) as applied to claims 30, 33, and 37 in view of **Dutta et al.** (U.S. PGPUB 2003/0050966).

11.   Regarding claim 1, **Harrow** teaches a system comprising:

A) a database system (Paragraph 39, Figure 5);

B) an application system for providing queries to a database system (Paragraph 33);

C) the database system coupled to the application system via a first connection over a network system (Paragraph 39, Figure 5);

D) a storage system having a shared volume to store results from queries made to the database system (Paragraph 39, Figure 5);

E) a first data path to provide a data connection between the storage system and the application system (Paragraph 39, Figure 5);

F) wherein the application system can directly access query results on the storage system without communicating via the first connection (Paragraph 39, Figure 5);

G) a second data path to provide a data connection between the storage system and the database system (Paragraph 39, Figure 5);

H) wherein the database system directly stores query results to the storage system via the second data path without communication via the first connection (Paragraph 39, Figure 5);

I) a return path selector coupled to the database system for selecting a return path over which to return the results from queries made to the database system (Paragraph 46).

The examiner notes that **Harrow** teaches **"a database system"** as "Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D

504-D" (Paragraph 39). The examiner further notes that **Harrow** teaches **"an application system for providing queries to a database system"** as "Client A 404-A makes a file request 410 (via, for example, surfing the web) to directory server 402. Directory server 402 looks to see where the file may be located on the local network 415 by referencing a prioritized list of closest clients with the latest version of the file" (Paragraph 33). The examiner further notes that **Harrow** teaches **"the database system coupled to the application system via a first connection over a network system"** as "Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D" (Paragraph 39). The examiner further notes that connection 510 in Figure 5 of **Harrow** clearly shows a first connection. The examiner further notes that **Harrow** teaches **"a storage system having a shared volume to store results from queries made to the database system"** as "A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible" (Paragraph 39). The examiner further notes that **Harrow** teaches **"a first data path to provide a data connection between the storage system and the application system"** as "At this point Client P 504-P may decide to either stay online and download the file or direct

that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 514 in Figure 5 of **Harrow** clearly shows a first data path between the storage (Client D) and the application system (Client P). The examiner further notes that **Harrow** teaches **"wherein the application system can directly access query results on the storage system without communicating via the first connection"** as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches **"a second data path to provide a data connection between the storage system and the database system"** as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is

selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 512 in Figure 5 of **Harrow** clearly shows a second data path between the storage (Client D) and the database system (Directory Server). The examiner further notes that **Harrow** teaches "**wherein the database system directly stores query results to the storage system via the second data path without communication via the first connection**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**a return path selector coupled to the database system for selecting a return path over which to return the results from queries made to the database system**" as "During operation, the server and router traffic is monitored to determine transfer times of files. This information is analyzed and stored in database

704. In one embodiment of the present invention, the database 704 would maintain a prioritized list of closest clients for a particular file. This database 704 information may then be accessed by a directory server to determine how to re-route and/or redirect traffic so as to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

Harrow does not explicitly teach:

J) the return path selector selecting from among at least the <u>first connection over the network or the first data path between the storage system and the application system</u>;

K) <u>wherein the return path selector determines a data path based upon one or more attributes of the query results</u>.

Dutta, however, teaches **"the return path selector selecting from among at least the <u>first connection over the network or the first data path between the storage system and the application system</u>"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87) and **"<u>wherein the return path selector determines a data path based upon one or more attributes of the query results</u>"**

as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled" (Paragraph 86).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dutta's** would have allowed **Harrow's** to provide a method to improve download response times by re-routing potentially overloading query requests, as noted by **Dutta** (Paragraphs 10-11).

Regarding claim 2, **Harrow** further teaches a system comprising:

A) a request path selector coupled to the application system for selecting a request path over which to send query data for requests made to the database system (Paragraph 39, Figure 5);

B) the request path selector selecting from among at least the first connection or the storage system (Paragraph 39, Figure 5).

The examiner notes that **Harrow** teaches **"a request path selector coupled to the application system for selecting a request path over which to send query data for requests made to the database system"** as "Here, Client P 504-P represents a portable client such as a portable computer or PDA. Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from

Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches **"the request path selector selecting from among at least the first connection or the storage system"** as "Here, Client P 504-P represents a portable client such as a portable computer or PDA. Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39).

Regarding claim 3, **Harrow** further teaches a system comprising:
A) wherein the storage system is coupled to each of the application system and the database system using a switch (Paragraph 46, Figure 7).

The examiner notes that **Harrow** teaches **"wherein the storage system is coupled to each of the application system and the database system using a switch"** as "Server 702 is connected to routers 706-A through 706-N. Each router (706-A through 706-N) is connected to a respective group 706-ANX through 706-NNX. Each group (706-ANX through 706-NNX) includes a Network 706-AN through 706-NN respectively and respective Clients A through N. Database 704 is connected to the

server 702. During operation, the server and router traffic is monitored to determine transfer times of files. This information is analyzed and stored in database 704. In one · embodiment of the present invention, the database 704 would maintain a prioritized list of closest clients for a particular file. This database 704 information may then be accessed by a directory server to determine how to re-route and/or redirect traffic so as to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

Regarding claim 4, **Harrow** further teaches a system comprising:

A) wherein a database hub system is used to couple to application system and the database system (Paragraph 46, Figure 7).

The examiner notes that **Harrow** teaches **"wherein a database hub system is used to couple to application system and the database system"** as "Server 702 is connected to routers 706-A through 706-N. Each router (706-A through 706-N) is connected to a respective group 706-ANX through 706-NNX. Each group (706-ANX through 706-NNX) includes a Network 706-AN through 706-NN respectively and respective Clients A through N. Database 704 is connected to the server 702. During operation, the server and router traffic is monitored to determine transfer times of files. This information is analyzed and stored in database 704. In one embodiment of the present invention, the database 704 would maintain a prioritized list of closest clients for a particular file. This database 704 information may then be accessed by a directory server to determine how to re-route and/or redirect traffic so as to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

Regarding claim 5, **Harrow** further teaches a system comprising:

A) wherein the results from the query have a size (Paragraph 33).

The examiner notes that **Harrow** teaches **"wherein the results from the query have a size"** as "Client A 404-A makes a file request 410 (via, for example, surfing the web) to directory server 402. Directory server 402 looks to see where the file may be located on the local network 415 by referencing a prioritized list of closest clients with the latest version of the file" (Paragraph 33). .

Harrow does not explicitly teach:

B) the return path selector chooses a return path based on the size of the results.

Dutta, however, teaches **"the return path selector chooses a return path based on the size of the results"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dutta's** would have allowed **Harrow's** to provide a method to improve download response times by re-routing potentially overloading query requests, as noted by **Dutta** (Paragraphs 10-11).

Regarding claim 6, **Harrow** does not explicitly teach a system comprising:

A) wherein the return path selector chooses a return path based on a prediction of the size of the results.

Dutta, however, teaches **"wherein the return path selector chooses a return path based on a prediction of the size of the results"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dutta's** would have allowed **Harrow's** to provide a method to improve download response times by re-routing potentially overloading query requests, as noted by **Dutta** (Paragraphs 10-11).

Regarding claim 7, **Harrow** does not explicitly teach a system comprising:
A) wherein the return path selector chooses a return path based on a measurement of throughput of the first connection.

Dutta, however, teaches **"wherein the return path selector chooses a return path based on a measurement of throughput of the first connection"** as "Over

time, alternate node list 526 provides peer node 506 with a record of the original peer node from which a file was obtained (if available) and also a record of the destination peer nodes to which a file was copied. The present invention then uses this recorded information to improve the response characteristics of peer node 506. As mentioned previously, using well-known monitoring techniques for gauging the computational load on a computer or the communication bandwidth load on a network to which the computer is connected, the source node can determine that its response characteristics would be inadequate if it attempted to fulfill a new download request" (Paragraph 63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dutta's** would have allowed **Harrow's** to provide a method to improve download response times by re-routing potentially overloading query requests, as noted by **Dutta** (Paragraphs 10-11).

Regarding claim 8, **Harrow** further teaches a system comprising:
A) wherein when the return path is chosen to be the storage system, the results are sent to the storage system as a file and an address in the storage system for the file is provided to the application using the first connection (Paragraph 39, Figure 5).

The examiner notes that **Harrow** teaches **"wherein when the return path is chosen to be the storage system, the results are sent to the storage system as a file and an address in the storage system for the file is provided to the application using the first connection"** as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In

another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P
504-P may be initiated automatically when Client P 504-P is connected to the network
and Client D 504-D has the file locally" (Paragraph 39).

Regarding claim 9, **Harrow** does not explicitly teach a system comprising:
A) wherein after the results are used by the application system, the application system
designates the results as used, thereby enabling them to be erased from the storage
system at a later time.

Dutta, however, teaches **"wherein after the results are used by the
application system, the application system designates the results as used,
thereby enabling them to be erased from the storage system at a later time"** as
"Assuming that the originating node has sufficient communication bandwidth, the results
of the search should be received within a relatively short amount of time. The search
results are stored or cached as they are received. The Gnutella-enabled application
then presents the search results to the user in some fashion, and the user may select,
through some type of user interface in the application, a filename that the user desires
to retrieve. The application, which has stored the search results that include one or
more nodes that responded with a search hit, can download a selected file to the user's ·
node. Simple HTTP messages can be used for the download operation, such as a
"Get", a "Put" message (for a Gnutella "Push" request" (Paragraph 47).

It would have been obvious to one of ordinary skill in the art at the time the
invention was made to combine the teachings of the cited references because teaching
Dutta's would have allowed **Harrow's** to provide a method to improve download
response times by re-routing potentially overloading query requests, as noted by **Dutta**
(Paragraphs. 10-11).

Regarding claim 16, **Harrow** further teaches a system comprising:
A) wherein the database includes a hub system for system coupled to each of the
application system and the database system (Paragraph 46, Figure 7).

The examiner notes that **Harrow** teaches **"wherein the database includes a**
hub system for system coupled to each of the application system and the
database system" as "Server 702 is connected to routers 706-A through 706-N. Each
router (706-A through 706-N) is connected to a respective group 706-ANX through 706-
NNX. Each group (706-ANX through 706-NNX) includes a Network 706-AN through
706-NN respectively and respective Clients A through N. Database 704 is connected to
the server 702. During operation, the server and router traffic is monitored to determine
transfer times of files. This information is analyzed and stored in database 704. In one
embodiment of the present invention, the database 704 would maintain a prioritized list
of closest clients for a particular file. This database 704 information may then be
accessed by a directory server to determine how to re-route and/or redirect traffic so as
to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

Regarding claim 17, **Harrow** teaches a system comprising:

A) a database system (Paragraph 39, Figure 5);

B) an application system for providing queries to a database system coupled to the
application system via a first connection over a network (Paragraphs 33 and 39, Figure
5);

C) a storage system having a volume to store results from queries made to the
database system (Paragraph 39, Figure 5);

D) a first data path to provide a data connection between the storage system and the
application system (Paragraph 39, Figure 5);

E) wherein the application system can directly access query results on the storage
system without communicating via the first connection (Paragraph 39, Figure 5);

F) a second data path to provide a data connection between the storage system and
the database system (Paragraph 39, Figure 5);

G) wherein the database system directly stores query results to the storage system via
the second data path without communication via the first connection (Paragraph 39,
Figure 5);

H) a return path selector coupled to the database system for selecting a return path over which to return the results from queries made to the database system (Paragraph 46).

The examiner notes that **Harrow** teaches **"a database system"** as "Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D" (Paragraph 39). The examiner further notes that **Harrow** teaches **"an application system for providing queries to a database system coupled to the application system via a first connection over a network"** as "Client A 404-A makes a file request 410 (via, for example, surfing the web) to directory server 402. Directory server 402 looks to see where the file may be located on the local network 415 by referencing a prioritized list of closest clients with the latest version of the file" (Paragraph 33) and "Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D" (Paragraph 39). The examiner further notes that connection 510 in Figure 5 of **Harrow** clearly shows a first connection. The examiner further notes that **Harrow** teaches **"a storage system having a volume to store results from queries made to the database system"** as "A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest

client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible" (Paragraph 39). The examiner further notes that **Harrow** teaches "**a first data path to provide a data connection between the storage system and the application system**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 514 in Figure 5 of **Harrow** clearly shows a first data path between the storage (Client D) and the application system (Client P). The examiner further notes that **Harrow** teaches "**wherein the application system can directly access query results on the storage system without communicating via the first connection**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the

directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**a second data path to provide a data connection between the storage system and the database system**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 512 in Figure 5 of **Harrow** clearly shows a second data path between the storage (Client D) and the database system (Directory Server). The examiner further notes that **Harrow** teaches "**wherein the database system directly stores query results to the storage system via the second data path without communication via the first connection**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information

stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches **"a return path selector coupled to the database system for selecting a return path over which to return the results from queries made to the database system"** as "During operation, the server and router traffic is monitored to determine transfer times of files. This information is analyzed and stored in database 704. In one embodiment of the present invention, the database 704 would maintain a prioritized list of closest clients for a particular file. This database 704 information may then be accessed by a directory server to determine how to re-route and/or redirect traffic so as to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

       Harrow does not explicitly teach:

J) the return path selector selecting from among at least the <u>first connection over the network or the first data path between the storage system and the application system</u>;

K) <u>wherein the return path selector determines a data path based upon one or more attributes of the query results.</u>

       Dutta, however, teaches **"the return path selector selecting from among at least the <u>first connection over the network or the first data path between the storage system and the application system</u>"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then

uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87) and **"wherein the return path selector determines a data path based upon one or more attributes of the query results"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled" (Paragraph 86).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dutta's** would have allowed **Harrow's** to provide a method to improve download response times by re-routing potentially overloading query requests, as noted by **Dutta** (Paragraphs 10-11).

Regarding claim 18, **Harrow** further teaches a system comprising:
A) wherein the storage system is coupled to each of the application system and the database system using a switch (Paragraph 46, Figure 7).

The examiner notes that **Harrow** teaches **"wherein the storage system is coupled to each of the application system and the database system using a switch"** as "Server 702 is connected to routers 706-A through 706-N. Each router (706-A through 706-N) is connected to a respective group 706-ANX through 706-NNX. Each group (706-ANX through 706-NNX) includes a Network 706-AN through 706-NN respectively and respective Clients A through N. Database 704 is connected to the server 702. During operation, the server and router traffic is monitored to determine transfer times of files. This information is analyzed and stored in database 704. In one

embodiment of the present invention, the database 704 would maintain a prioritized list of closest clients for a particular file. This database 704 information may then be accessed by a directory server to determine how to re-route and/or redirect traffic so as to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

Regarding claim 19, **Harrow** further teaches a system comprising:

A) wherein a database hub system is used to couple to application system and the database system (Paragraph 46, Figure 7).

The examiner notes that **Harrow** teaches **"wherein a database hub system is used to couple to application system and the database system"** as "Server 702 is connected to routers 706-A through 706-N. Each router (706-A through 706-N) is connected to a respective group 706-ANX through 706-NNX. Each group (706-ANX through 706-NNX) includes a Network 706-AN through 706-NN respectively and respective Clients A through N. Database 704 is connected to the server 702. During operation, the server and router traffic is monitored to determine transfer times of files. This information is analyzed and stored in database 704. In one embodiment of the present invention, the database 704 would maintain a prioritized list of closest clients for a particular file. This database 704 information may then be accessed by a directory server to determine how to re-route and/or redirect traffic so as to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

Regarding claim 20, **Harrow** further teaches a system comprising:

A) wherein the query data have a size (Paragraph 33).

The examiner notes that **Harrow** teaches **"wherein the query data have a size"** as "Client A 404-A makes a file request 410 (via, for example, surfing the web) to directory server 402. Directory server 402 looks to see where the file may be located on the local network 415 by referencing a prioritized list of closest clients with the latest version of the file" (Paragraph 33).

Harrow does not explicitly teach:

B) the request path selector chooses a request path based on the size of the query
data.

   Dutta, however, teaches **"the request path selector chooses a request path
based on the size of the query data"** as "A determination is then made as to whether
the source node is in an overload condition (step 734). The overload condition may
already be existence with a set of current uploading and downloading operations, or the
overload condition could be predicted to occur if the download request were to be
fulfilled. In either case, if there is no overload condition, then the source node knows
that the peer node that will be receiving the requested file can subsequently act as an
alternate source for that particular file. Hence, the source node stores the node identifier
of the requesting peer node in the alternate node list associated with the requested file
(step 736). Optionally, the source node also stores a timestamp in association with the
stored node identifier of the requesting peer node (step 738). The requested file is then
uploaded to the peer node that submitted the download request (step 740), and the
process is complete. If it is determined that an overload condition is in effect or about to
occur, then the source node determines not to fulfill the download request for the
specified file. Instead, the source node retrieves the alternate node list that is
associated with the requested file (step 742) and generates a redirection response
containing the retrieved alternate node list (step 744). The source node then returns the
redirection response to the requesting peer node, i.e. client node (step 746), and the
process is complete" (Paragraphs 86-87).

   It would have been obvious to one of ordinary skill in the art at the time the
invention was made to combine the teachings of the cited references because teaching
Dutta's would have allowed **Harrow's** to provide a method to improve download
response times by re-routing potentially overloading query requests, as noted by **Dutta**
(Paragraphs 10-11).

   Regarding claim 21, **Harrow** further teaches a system comprising:

A) wherein when the request path is chosen to be the storage system, the query data are sent to the storage system as a file and an address in the storage system for the file is provided to the database system using the first connection (Paragraph 39, Figure 5).

The examiner notes that **Harrow** teaches **"wherein when the request path is chosen to be the storage system, the query data are sent to the storage system as a file and an address in the storage system for the file is provided to the database system using the first connection"** as "Here, Client P 504-P represents a portable client such as a portable computer or PDA. Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39).

Regarding claim 25, **Harrow** further teaches a system comprising:
A) a return path selector coupled to the database system for selecting a return path over which to return results from queries made to the database system (Paragraph 46).

The examiner notes that **Harrow** teaches **"a return path selector coupled to the database system for selecting a return path over which to return results from queries made to the database system"** as "During operation, the server and router traffic is monitored to determine transfer times of files. This information is analyzed and

stored in database 704. In one embodiment of the present invention, the database 704 would maintain a prioritized list of closest clients for a particular file. This database 704 information may then be accessed by a directory server to determine how to re-route and/or redirect traffic so as to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

Harrow does not explicitly teach:

B) the return path selector selecting from among at least the first connection or the storage system.

Dutta, however, teaches **"the return path selector selecting from among at least the first connection or the storage system"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dutta's** would have allowed **Harrow's** to provide a method to improve download

response times by re-routing potentially overloading query requests, as noted by **Dutta** (Paragraphs 10-11).

Regarding claim 26, **Harrow** further teaches a system comprising:

A) wherein the results from the query have a size (Paragraph 33).

The examiner notes that **Harrow** teaches **"wherein the results from the query have a size"** as "Client A 404-A makes a file request 410 (via, for example, surfing the web) to directory server 402. Directory server 402 looks to see where the file may be located on the local network 415 by referencing a prioritized list of closest clients with the latest version of the file" (Paragraph 33).

Harrow does not explicitly teach:

B) the return path selector chooses a return path based on the size of the results.

Dutta, however, teaches **"the return path selector chooses a return path based on the size of the results"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the

redirection response to the requesting peer node, i.e. client node (step 746), and the
process is complete" (Paragraphs 86-87).

It would have been obvious to one of ordinary skill in the art at the time the
invention was made to combine the teachings of the cited references because teaching
Dutta's would have allowed **Harrow's** to provide a method to improve download
response times by re-routing potentially overloading query requests, as noted by **Dutta**
(Paragraphs 10-11).

Regarding claim 27, **Harrow** further teaches a system comprising:
A) wherein when the return path is chosen to be the storage system, the results are
sent to the storage system as a file and an address in the storage system for the file is
provided to the application using the first connection (Paragraph 39, Figure 5).

The examiner notes that **Harrow** teaches **"wherein when the return path is
chosen to be the storage system, the results are sent to the storage system as a
file and an address in the storage system for the file is provided to the application
using the first connection"** as "At this point Client P 504-P may decide to either stay
online and download the file or direct that it be downloaded to the nearest client. If the
latter choice is selected, then the directory server 502 may determine that Client D 504-
D is the nearest client and direct that the download of the file from File server 522 be
directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with
Client P 504-P either presently connected to the network or disconnected. When the file
has been downloaded to Client D 504-D, the directory server 502 has this information
stored, and so when Client P 504-P again connects to the network and requests the file,
a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In
another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P
504-P may be initiated automatically when Client P 504-P is connected to the network
and Client D 504-D has the file locally" (Paragraph 39).

Regarding claim 28, **Harrow** teaches a system comprising:
A) a database system (Paragraph 39, Figure 5);

B) an application system for providing queries to a database system coupled to the application system via a first connection over a network (Paragraphs 33 and 39, Figure 5);

C) the database system including a gateway system (Paragraphs 39 and 46, Figures 5 and 7);

D) a storage system having a shared volume to store results from queries made to the database system (Paragraph 39, Figure 5);

E) a first data path to provide a data connection between the storage system and the application system (Paragraph 39, Figure 5);

F) wherein the application system can directly access query results on the storage system without communicating via the first connection (Paragraph 39, Figure 5);

G) a second data path to provide a data connection between the storage system and the database system (Paragraph 39, Figure 5);

H) wherein the database system directly stores query results to the storage system via the second data path without communication via the first connection (Paragraph 39, Figure 5);

I) the gateway system including a return path selector for selecting a return path over which to return the results from queries made to the database system (Paragraph 46).

The examiner notes that **Harrow** teaches **"a database system"** as "Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D" (Paragraph 39). The examiner further notes that **Harrow** teaches **"an application system for providing queries to a database system coupled to the application system via a first connection over a network"** as "Client A 404-A makes a file request 410 (via, for example, surfing the web) to directory server 402. Directory server 402 looks to see where the file may be located on the local network 415 by

referencing a prioritized list of closest clients with the latest version of the file"

(Paragraph 33) and "Client P 504-P may need a file from File Server 522. A request 510

to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P

(504-A through P, respectively). At this point Client P 504-P may decide to either stay

online and download the file or direct that it be downloaded to the nearest client. If the

latter choice is selected, then the directory server 502 may determine that Client D 504-

D is the nearest client and direct that the download of the file from File server 522 be

directed to Client D 504-D" (Paragraph 39). The examiner further notes that connection

510 in Figure 5 of **Harrow** clearly shows a first connection. The examiner further notes

that **Harrow** teaches "**a storage system having a shared volume to store results**

from queries made to the database system" as "A request 510 to directory server

502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P,

respectively). At this point Client P 504-P may decide to either stay online and download

the file or direct that it be downloaded to the nearest client. If the latter choice is

selected, then the directory server 502 may determine that Client D 504-D is the nearest

client and direct that the download of the file from File server 522 be directed to Client D

504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either

presently connected to the network or disconnected. When the file has been

downloaded to Client D 504-D, the directory server 502 has this information stored, and

so when Client P 504-P again connects to the network and requests the file, a local

peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible" (Paragraph

39). The examiner further notes that **Harrow** teaches "**a first data path to provide a**

data connection between the storage system and the application system" as "At

this point Client P 504-P may decide to either stay online and download the file or direct

that it be downloaded to the nearest client. If the latter choice is selected, then the

directory server 502 may determine that Client D 504-D is the nearest client and direct

that the download of the file from File server 522 be directed to Client D 504-D. This

transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently

connected to the network or disconnected. When the file has been downloaded to Client

D 504-D, the directory server 502 has this information stored, and so when Client P

504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 514 in Figure 5 of **Harrow** clearly shows a first data path between the storage (Client D) and the application system (Client P). The examiner further notes that **Harrow** teaches **"wherein the application system can directly access query results on the storage system without communicating via the first connection"** as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches **"a second data path to provide a data connection between the storage system and the database system"** as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local

peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 512 in Figure 5 of **Harrow** clearly shows a second data path between the storage (Client D) and the database system (Directory Server). The examiner further notes that **Harrow** teaches "**wherein the database system directly stores query results to the storage system via the second data path without communication via the first connection**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**the gateway system including a return path selector for selecting a return path over which to return the results from queries made to the database system**" as "During operation, the server and router traffic is monitored to determine transfer times of files. This information is analyzed and stored in database 704. In one embodiment of the present invention, the database 704 would maintain a prioritized list of closest clients for a particular file. This database 704 information may then be accessed by a directory server to determine how to re-route and/or redirect traffic so as to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

       Harrow does not explicitly teach:

J) the return path selector selecting from among at least the <u>first connection over the</u> <u>network or the first data path between the storage system and the application system</u>;

K) <u>wherein the return path selector determines a data path based upon one or more</u> <u>attributes of the query results</u>.

Dutta, however, teaches **"the return path selector selecting from among at** **least the <u>first connection over the network or the first data path between the</u>** **<u>storage system and the application system</u>"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87) and **"<u>wherein the return path selector</u>** **<u>determines a data path based upon one or more attributes of the query results</u>"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled" (Paragraph 86).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dutta's** would have allowed **Harrow's** to provide a method to improve download response times by re-routing potentially overloading query requests, as noted by **Dutta** (Paragraphs 10-11).

Regarding claim 29, **Harrow** further teaches a system comprising:
A) wherein the gateway system includes a return path selector for selecting a return path over which to return results from queries made to the database system (Paragraph 46).

The examiner notes that **Harrow** teaches **"wherein the gateway system includes a return path selector for selecting a return path over which to return results from queries made to the database system"** as "During operation, the server and router traffic is monitored to determine transfer times of files. This information is analyzed and stored in database 704. In one embodiment of the present invention, the database 704 would maintain a prioritized list of closest clients for a particular file. This database 704 information may then be accessed by a directory server to determine how to re-route and/or redirect traffic so as to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

Harrow does not explicitly teach:
B) the return path selector selecting from among at least the first connection or the storage system.

Dutta, however, teaches **"the return path selector selecting from among at least the first connection or the storage system"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node

stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dutta's** would have allowed **Harrow's** to provide a method to improve download response times by re-routing potentially overloading query requests, as noted by **Dutta** (Paragraphs 10-11).

Regarding claim 31, **Harrow** teaches a system comprising:

A) a database system (Paragraph 39, Figure 5);

B) an application system for providing queries to a database system (Paragraph 33);

C) the database system coupled to the application system via a first connection over a network (Paragraph 39, Figure 5);

D) a switch coupled to each of the database system and the application system (Paragraph 46, Figure 7);

E) a storage system coupled to the switch, the storage system having a volume to store results from queries made to the database system (Paragraphs 39 and 46, Figures 5 and 7);

F) a first data path to provide a data connection between the storage system and the application system (Paragraph 39, Figure 5);

G) <u>wherein the application system can directly access query results on the storage</u>

<u>system without communicating via the first connection</u> (Paragraph 39, Figure 5);

H) <u>a second data path to provide a data connection between the storage system and</u>

<u>the database system</u> (Paragraph 39, Figure 5);

I) <u>wherein the database system directly stores query results to the storage system via</u>

<u>the second data path without communication via the first connection</u> (Paragraph 39,

Figure 5);

J) a return path selector coupled to the database system for selecting a return path

over which to return the results from queries made to the database system (Paragraph

46).

  The examiner notes that **Harrow** teaches **"a database system"** as "Client P

504-P may need a file from File Server 522. A request 510 to directory server 502 may

indicate that there is no local copy on Client A, B, C, D, or P (504-A through P,

respectively). At this point Client P 504-P may decide to either stay online and download

the file or direct that it be downloaded to the nearest client. If the latter choice is

selected, then the directory server 502 may determine that Client D 504-D is the nearest

client and direct that the download of the file from File server 522 be directed to Client D

504-D" (Paragraph 39). The examiner further notes that **Harrow** teaches **"an**

application system for providing queries to a database system" as "Client A 404-A

makes a file request 410 (via, for example, surfing the web) to directory server 402.

Directory server 402 looks to see where the file may be located on the local network

415 by referencing a prioritized list of closest clients with the latest version of the file"

(Paragraph 33). The examiner further notes that **Harrow** teaches **"the database**

system coupled to the application system via a first connection over a network"

as "Client P 504-P may need a file from File Server 522. A request 510 to directory

server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A

through P, respectively). At this point Client P 504-P may decide to either stay online

and download the file or direct that it be downloaded to the nearest client. If the latter

choice is selected, then the directory server 502 may determine that Client D 504-D is

the nearest client and direct that the download of the file from File server 522 be

directed to Client D 504-D" (Paragraph 39). The examiner further notes that connection
510 in Figure 5 of **Harrow** clearly shows a first connection. The examiner notes that
Harrow teaches "**a switch coupled to each of the database system and the
application system**" as "Server 702 is connected to routers 706-A through 706-N.
Each router (706-A through 706-N) is connected to a respective group 706-ANX through
706-NNX. Each group (706-ANX through 706-NNX) includes a Network 706-AN through
706-NN respectively and respective Clients A through N. Database 704 is connected to
the server 702. During operation, the server and router traffic is monitored to determine
transfer times of files. This information is analyzed and stored in database 704. In one
embodiment of the present invention, the database 704 would maintain a prioritized list
of closest clients for a particular file. This database 704 information may then be
accessed by a directory server to determine how to re-route and/or redirect traffic so as
to effect the fastest peer-to-peer transfer between clients" (Paragraph 46). The
examiner further notes that **Harrow** teaches "**a storage system coupled to the
switch, the storage system having a volume to store results from queries made to
the database system**" as "A request 510 to directory server 502 may indicate that
there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this
point Client P 504-P may decide to either stay online and download the file or direct that
it be downloaded to the nearest client. If the latter choice is selected, then the directory
server 502 may determine that Client D 504-D is the nearest client and direct that the
download of the file from File server 522 be directed to Client D 504-D. This transfer (via
522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to
the network or disconnected. When the file has been downloaded to Client D 504-D, the
directory server 502 has this information stored, and so when Client P 504-P again
connects to the network and requests the file, a local peer-to-peer transfer 514 from
Client D 504-D to Client P 504-P is possible" (Paragraph 39). The examiner further
notes that **Harrow** teaches "**a first data path to provide a data connection between
the storage system and the application system**" as "At this point Client P 504-P may
decide to either stay online and download the file or direct that it be downloaded to the
nearest client. If the latter choice is selected, then the directory server 502 may

determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 514 in Figure 5 of **Harrow** clearly shows a first data path between the storage (Client D) and the application system (Client P). The examiner further notes that **Harrow** teaches "**wherein the application system can directly access query results on the storage system without communicating via the first connection**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**a second data path to provide a data connection between the storage system and the database system**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct

that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 512 in Figure 5 of **Harrow** clearly shows a second data path between the storage (Client D) and the database system (Directory Server). The examiner further notes that **Harrow** teaches "**wherein the database system directly stores query results to the storage system via the second data path without communication via the first connection**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**a return path selector coupled to the database system for selecting a return path over which to return the results from queries made to the database system**" as "During operation, the server and router traffic is monitored to determine transfer times of files. This information is analyzed and stored in database 704. In one embodiment of the present invention, the database 704 would maintain a prioritized list of closest

clients for a particular file. This database 704 information may then be accessed by a directory server to determine how to re-route and/or redirect traffic so as to effect the fastest peer-to-peer transfer between clients" (Paragraph 46).

Harrow does not explicitly teach:

K) the return path selector selecting from among at least the first connection over the network or the first data path between the storage system and the application system;

L) wherein the return path selector determines a data path based upon one or more attributes of the query results.

Dutta, however, teaches "**the return path selector selecting from among at least the first connection over the network or the first data path between the storage system and the application system**" as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87) and "**wherein the return path selector determines a data path based upon one or more attributes of the query results**" as "A determination is then made as to whether the source node is in an overload

condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled" (Paragraph 86).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dutta's** would have allowed **Harrow's** to provide a method to improve download response times by re-routing potentially overloading query requests, as noted by **Dutta** (Paragraphs 10-11).

Regarding claim 32, **Harrow** further teaches a system comprising:

A) a request path selector coupled to the application system for selecting a request path over which to send query data for requests made to the database system (Paragraph 39, Figure 5);

B) the request path selector selecting from among at least the communications network connection or the switch (Paragraphs 39 and 46, Figures 5 and 7).

The examiner notes that **Harrow** teaches "**a request path selector coupled to the application system for selecting a request path over which to send query data for requests made to the database system**" as "Here, Client P 504-P represents a portable client such as a portable computer or PDA. Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-

peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches **"the request path selector selecting from among at least the communications network connection or the switch"** as "Here, Client P 504-P represents a portable client such as a portable computer or PDA. Client P 504-P may need a file from File Server 522. A request 510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39).

Regarding claim 38, **Harrow** further teaches a system comprising:

A) retrieving the query data from the storage system (Paragraph 39, Figure 5); and

B) using the query data to obtain the results (Paragraph 39, Figure 5).

The examiner notes that **Harrow** teaches **"retrieving the query data from the storage system"** as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been

downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**using the query data to obtain the results**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39).

Regarding claim 41, **Harrow** teaches a method comprising:

A) receiving from the database system over the network, results of execution of queries (Paragraphs 33 and 39, Figure 5);

B) the queries being sent to the database system by the application system (Paragraph 33);

C) storing the results of execution of queries in a storage area that the database system and the application system can access separately via separate connections to the storage area (Paragraph 39, Figure 5);

D) the separate connections comprising: a first data path to provide a data connection between the storage system and the application system (Paragraph 39, Figure 5);

E) <u>wherein the application system can directly access query results on the storage</u>
<u>system without communicating via the first connection</u> (Paragraph 39, Figure 5);

F) <u>a second data path to provide a data connection between the storage system and</u>
<u>the database system</u> (Paragraph 39, Figure 5);

G) <u>wherein the database system directly stores query results to the storage system via</u>
<u>the second data path without communication via the first connection</u> (Paragraph 39,
Figure 5);

I) sending, in response to a request from the application system, the results of
execution of queries to the application system over the network (Paragraph 39, figure
5).

The examiner notes that **Harrow** teaches **"receiving from the database
system over the network, results of execution of queries"** as "Client P 504-P may
need a file from File Server 522. A request 510 to directory server 502 may indicate that
there is no local copy on Client A, B, C, D, or P (504-A through P, respectively). At this
point Client P 504-P may decide to either stay online and download the file or direct that
it be downloaded to the nearest client. If the latter choice is selected, then the directory
server 502 may determine that Client D 504-D is the nearest client and direct that the
download of the file from File server 522 be directed to Client D 504-D" (Paragraph 39).
The examiner further notes that **Harrow** teaches **"the queries being sent to the
database system by the application system"** as "Client A 404-A makes a file request
410 (via, for example, surfing the web) to directory server 402. Directory server 402
looks to see where the file may be located on the local network 415 by referencing a
prioritized list of closest clients with the latest version of the file" (Paragraph 33). The
examiner further notes that **Harrow** teaches **"storing the results of execution of
queries in a storage area that the database system and the application system
can access separately via separate connections to the storage area"** as "A request
510 to directory server 502 may indicate that there is no local copy on Client A, B, C, D,
or P (504-A through P, respectively). At this point Client P 504-P may decide to either
stay online and download the file or direct that it be downloaded to the nearest client. If
the latter choice is selected, then the directory server 502 may determine that Client D

504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible" (Paragraph 39). The examiner further notes that **Harrow** teaches "**the separate connections comprising: a first data path to provide a data connection between the storage system and the application system**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 514 in Figure 5 of **Harrow** clearly shows a first data path between the storage (Client D) and the application system (Client P). The examiner further notes that **Harrow** teaches "**wherein the application system can directly access query results on the storage system without communicating via the first connection**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or

disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**a second data path to provide a data connection between the storage system and the database system**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 512 in Figure 5 of **Harrow** clearly shows a second data path between the storage (Client D) and the database system (Directory Server). The examiner further notes that **Harrow** teaches "**wherein the database system directly stores query results to the storage system via the second data path without communication via the first connection**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client

D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches **"sending, in response to a request from the application system, the results of execution of queries to the application system over the network"** as At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39).

Harrow does not explicitly teach:

H) determining a return path for the results of the execution of queries to the application system based upon one or more attributes of the results of the execution of queries;

J) if the network is determined to be the return path or returning an address in the shared volume for the results of the execution of the query if the shared volume is determined to be the return path.

Dutta, however, teaches **"determining a return path for the results of the execution of queries to the application system based upon one or more attributes of the results of the execution of queries"** as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition

may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87) and "**if the network is determined to be the return path or returning an address in the shared volume for the results of the execution of the query if the shared volume is determined to be the return path**" as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source

node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching Dutta's would have allowed Harrow's to provide a method to improve download response times by re-routing potentially overloading query requests, as noted by Dutta (Paragraphs 10-11).

Regarding claim 42, Harrow teaches a system comprising:

A) an application system (Paragraphs 33 and 39, Figure 5);

B) a database system connected to the application system via a first network connection (Paragraph 39, Figure 5);

C) a return path selector coupled to the database system for selecting a return path over which to return the results from queries made to the database system (Paragraph 46, Figure 7);

D) a data storage system connected to the application system via a first data path and connected to the database system through a second data path (Paragraph 39, Figure 5)

E) the first data path providing a data connection between the storage system and the application system (Paragraph 39, Figure 5);

F) through which the application system can directly access query results on the storage system without communicating via the first connection (Paragraph 39, Figure 5);

G) and the second data path providing a data connection between the storage system and the database system (Paragraph 39, Figure 5);

H) through which the database system directly stores query results to the storage system via the second data path without communication via the first connection (Paragraph 39, Figure 5);

I) sending a query from the application system to the database system by using the first

<u>network</u> connection (Paragraph 39, Figure 5);

L) storing a result of execution of the query in a shared volume of the data storage

system that can be accessed by the application system <u>via the first data path</u> and by the

database system <u>via the second data path</u> (Paragraph 39, Figure 5);

M) obtaining at the application system, the result of execution of the query from the

storage system via the <u>first data path</u> without going through the first connection over the

network (Paragraph 39, Figure 5).

  The examiner notes that **Harrow** teaches "**an application system**" as "Client A

404-A makes a file request 410 (via, for example, surfing the web) to directory server

402. Directory server 402 looks to see where the file may be located on the local

network 415 by referencing a prioritized list of closest clients with the latest version of

the file" (Paragraph 33). The examiner further notes that **Harrow** teaches "**a database**

system connected to the application system via a first network connection" as

"Client P 504-P may need a file from File Server 522. A request 510 to directory server

502 may indicate that there is no local copy on Client A, B, C, D, or P (504-A through P,

respectively). At this point Client P 504-P may decide to either stay online and download

the file or direct that it be downloaded to the nearest client. If the latter choice is

selected, then the directory server 502 may determine that Client D 504-D is the nearest

client and direct that the download of the file from File server 522 be directed to Client D

504-D" (Paragraph 39). The examiner further notes that **Harrow** teaches "**a return**

path selector coupled to the database system for selecting a return path over

which to return the results from queries made to the database system" as "During

operation, the server and router traffic is monitored to determine transfer times of files.

This information is analyzed and stored in database 704. In one embodiment of the

present invention, the database 704 would maintain a prioritized list of closest clients for

a particular file. This database 704 information may then be accessed by a directory

server to determine how to re-route and/or redirect traffic so as to effect the fastest

peer-to-peer transfer between clients" (Paragraph 46). The examiner further notes that

Harrow teaches "**a data storage system connected to the application system via a**

first data path and connected to the database system through a second data

path" as "A request 510 to directory server 502 may indicate that there is no local copy

on Client A, B, C, D, or P (504-A through P, respectively). At this point Client P 504-P

may decide to either stay online and download the file or direct that it be downloaded to

the nearest client. If the latter choice is selected, then the directory server 502 may

determine that Client D 504-D is the nearest client and direct that the download of the

file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518,

502, 512) may occur with Client P 504-P either presently connected to the network or

disconnected. When the file has been downloaded to Client D 504-D, the directory

server 502 has this information stored, and so when Client P 504-P again connects to

the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D

to Client P 504-P is possible" (Paragraph 39). The examiner further notes that **Harrow**

teaches "**the first data path providing a data connection between the storage**

system and the application system" as "At this point Client P 504-P may decide to

either stay online and download the file or direct that it be downloaded to the nearest

client. If the latter choice is selected, then the directory server 502 may determine that

Client D 504-D is the nearest client and direct that the download of the file from File

server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512)

may occur with Client P 504-P either presently connected to the network or

disconnected. When the file has been downloaded to Client D 504-D, the directory

server.502 has this information stored, and so when Client P 504-P again connects to

the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D

to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer

514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P

504-P is connected to the network and Client D 504-D has the file locally" (Paragraph

39). The examiner further notes that connection 514 in Figure 5 of **Harrow** clearly

shows a first data path between the storage (Client D) and the application system

(Client P). The examiner further notes that **Harrow** teaches "**through which the**

application system can directly access query results on the storage system

without communicating via the first connection" as "At this point Client P 504-P

may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches "**and the second data path providing a data connection between the storage system and the database system**" as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that connection 512 in Figure 5 of **Harrow** clearly shows a second data path between the storage (Client D) and the database system (Directory Server). The examiner further notes that **Harrow** teaches "**through which the database system directly stores query results to the storage system via the second data path without communication via the first connection**" as "At this point Client P 504-P may decide

to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches **"sending a query from the application system to the database system by using the first <u>network</u> connection"** as At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39). The examiner further notes that **Harrow** teaches **"storing a result of execution of the query in a shared volume of the data storage system that can be accessed by the application system <u>via the first data path</u> and by the database system <u>via the second data path</u>"** as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may

determine that Client D 504-D is the nearest client and direct that the download of the
file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518,
502, 512) may occur with Client P 504-P either presently connected to the network or
disconnected. When the file has been downloaded to Client D 504-D, the directory
server 502 has this information stored, and so when Client P 504-P again connects to
the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D
to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer
514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P
504-P is connected to the network and Client D 504-D has the file locally" (Paragraph
39). The examiner further notes that **Harrow** teaches **"obtaining at the application
system, the result of execution of the query from the storage system via the <u>first</u>
<u>data path</u> without going through the first connection over the network"** as "At this
point Client P 504-P may decide to either stay online and download the file or direct that
it be downloaded to the nearest client. If the latter choice is selected, then the directory
server 502 may determine that Client D 504-D is the nearest client and direct that the
download of the file from File server 522 be directed to Client D 504-D. This transfer (via
522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to
the network or disconnected. When the file has been downloaded to Client D 504-D, the
directory server 502 has this information stored, and so when Client P 504-P again
connects to the network and requests the file, a local peer-to-peer transfer 514 from
Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-
peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically
when Client P 504-P is connected to the network and Client D 504-D has the file locally"
(Paragraph 39).

     Harrow does not explicitly teach:

J) <u>selecting a return path over which to return the results from queries made to the
database system from among at least the first network connection or the firsts data path
between the storage system and the application system</u>;

K) <u>wherein the return path selector determines the return path based upon one or more
attributes of the query results</u>.

Dutta, however, teaches "**selecting a return path over which to return the results from queries made to the database system from among at least the first network connection or the firsts data path between the storage system and the application system**" as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled. In either case, if there is no overload condition, then the source node knows that the peer node that will be receiving the requested file can subsequently act as an alternate source for that particular file. Hence, the source node stores the node identifier of the requesting peer node in the alternate node list associated with the requested file (step 736). Optionally, the source node also stores a timestamp in association with the stored node identifier of the requesting peer node (step 738). The requested file is then uploaded to the peer node that submitted the download request (step 740), and the process is complete. If it is determined that an overload condition is in effect or about to occur, then the source node determines not to fulfill the download request for the specified file. Instead, the source node retrieves the alternate node list that is associated with the requested file (step 742) and generates a redirection response containing the retrieved alternate node list (step 744). The source node then returns the redirection response to the requesting peer node, i.e. client node (step 746), and the process is complete" (Paragraphs 86-87) and "**wherein the return path selector determines the return path based upon one or more attributes of the query results**" as "A determination is then made as to whether the source node is in an overload condition (step 734). The overload condition may already be existence with a set of current uploading and downloading operations, or the overload condition could be predicted to occur if the download request were to be fulfilled" (Paragraph 86).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dutta's** would have allowed **Harrow's** to provide a method to improve download

response times by re-routing potentially overloading query requests, as noted by **Dutta** (Paragraphs 10-11).

12.   Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Harrow et al.** (U.S. PGPUB 2003/0009518) as applied to claims 30, 33, and 37 in view of **Dutta et al.** (U.S. PGPUB 2003/0050966) as applied to claims 1-9, 16-21, 25-29, 31-32, 28, and 41-42, and in view of **Vronay et al.** (U.S. PGPUB 2004/0254928).

13.   Regarding claim 10, **Harrow** and **Dutta** do not explicitly teach a system comprising:

A) wherein after the query data is used by the database system, the database system reuses the query data for a further query.

Vronay, however, teaches **"wherein after the query data is used by the database system, the database system reuses the query data for a further query"** as "A database query formed according to the present user interface may then be persisted or stored as a database query object. Such an object allows a query to be refined, such as by a user adding or deleting items in a set of results returned by the query. Such additions or deletions, which are referred to as exceptions, may be stored with the query as a data structure. In some implementations, a revised database query in the chunk expression language format can be generated automatically to incorporate exceptions in the exception list" (Paragraph 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Vronay's** would have allowed **Harrow's** and **Dutta's** to provide a method to reduce resource requirements for maintaining and implementing the separate exceptions in order to combine the user convenience of conventional simple search languages with the expressiveness and refinements of powerful query specification languages, as noted by **Vronay** (Paragraph 5).

Regarding claim 14, **Harrow** and **Dutta** do not explicitly teach a system comprising:

A) wherein after the query data is used by the database system, the database system designates the query data as used, thereby enabling them to be erased from the storage system at a later time.

Vronay, however, teaches "**wherein after the query data is used by the database system, the database system designates the query data as used, thereby enabling them to be erased from the storage system at a later time**" as "A database query formed according to the present user interface may then be persisted or stored as a database query object. Such an object allows a query to be refined, such as by a user adding or deleting items in a set of results returned by the query. Such additions or deletions, which are referred to as exceptions, may be stored with the query as a data structure. In some implementations, a revised database query in the chunk expression language format can be generated automatically to incorporate exceptions in the exception list" (Paragraph 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching Vronay's would have allowed Harrow's and Dutta's to provide a method to reduce resource requirements for maintaining and implementing the separate exceptions in order to combine the user convenience of conventional simple search languages with the expressiveness and refinements of powerful query specification languages, as noted by Vronay (Paragraph 5).

14.   Claims 11, 22, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Harrow et al.** (U.S. PGPUB 2003/0009518) as applied to claims 30, 33, and 37 in view of **Dutta et al.** (U.S. PGPUB 2003/0050966) as applied to claims 1-9, 16-21, 25-29, 31-32, 28, and 41-42, and in view of **Dar et al.** (U.S. PGPUB 2003/0154236).

15.   Regarding claim 11, **Harrow** and **Dutta** do not explicitly teach a system comprising:

A) wherein the file has therewith a key and the key is used to control access to the results.

Dar, however, teaches **"wherein the file has therewith a key and the key is used to control access to the results"** as "communication between agents and dBSwitch may be encrypted, in order to ensure that the agents only perform commands on behalf of the dBSwitch and that information sent form the agents can only be used by the dBSwitch" (Paragraph 64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dar's** would have allowed **Harrow's** and **Dutta's** to provide a method to allow for high utilization, high availability, scalability on demand, simplified management and security, in a shared and heterogeneous application environment, as noted by **Dar** (Paragraph 33).

Regarding claim 22, **Harrow** and **Dutta** do not explicitly teach a system comprising:

A) wherein the file has therewith a key and the key is used to control access to the results.

Dar, however, teaches **"wherein the file has therewith a key and the key is used to control access to the results"** as "communication between agents and dBSwitch may be encrypted, in order to ensure that the agents only perform commands on behalf of the dBSwitch and that information sent form the agents can only be used by the dBSwitch" (Paragraph 64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dar's** would have allowed **Harrow's** and **Dutta's** to provide a method to allow for high utilization, high availability, scalability on demand, simplified management and security, in a shared and heterogeneous application environment, as noted by **Dar** (Paragraph 33).

Regarding claim 34, **Harrow** and **Dutta** do not explicitly teach a system comprising:

A) generating a key for the results to identify their location; and

B) sending the key over the network to the query provider. .

Dar, however, teaches **"generating a key for the results to identify their location"** and **"sending the key over the network to the query provider"** as "communication between agents and dBSwitch may be encrypted, in order to ensure that the agents only perform commands on behalf of the dBSwitch and that information sent form the agents can only be used by the dBSwitch" (Paragraph 64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching Dar's would have allowed Harrow's and Dutta's to provide a method to allow for high utilization, high availability, scalability on demand, simplified management and security, in a shared and heterogeneous application environment, as noted by Dar (Paragraph 33).

Regarding claim 35, **Harrow** further teaches a method comprising:

A) at the query provider, retrieving the results from the storage system (Paragraph 39, Figure 5).

The examiner notes that **Harrow** teaches **"at the query provider, retrieving the results from the storage system"** as "At this point Client P 504-P may decide to either stay online and download the file or direct that it be downloaded to the nearest client. If the latter choice is selected, then the directory server 502 may determine that Client D 504-D is the nearest client and direct that the download of the file from File server 522 be directed to Client D 504-D. This transfer (via 522, 520, 518, 502, 512) may occur with Client P 504-P either presently connected to the network or disconnected. When the file has been downloaded to Client D 504-D, the directory server 502 has this information stored, and so when Client P 504-P again connects to the network and requests the file, a local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P is possible. In another embodiment, the local peer-to-peer transfer 514 from Client D 504-D to Client P 504-P may be initiated automatically when Client P 504-P is connected to the network and Client D 504-D has the file locally" (Paragraph 39).

Regarding claim 36, **Harrow** and **Dutta** do not explicitly teach a system comprising:

A) encrypting at least one of the key and the results.

Dar, however, teaches **"encrypting at least one of the key and the results"** as "communication between agents and dBSwitch may be encrypted, in order to ensure that the agents only perform commands on behalf of the dBSwitch and that information sent form the agents can only be used by the dBSwitch" (Paragraph 64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Dar's** would have allowed **Harrow's** and **Dutta's** to provide a method to allow for high utilization, high availability, scalability on demand, simplified management and security, in a shared and heterogeneous application environment, as noted by **Dar** (Paragraph 33).

15.   Claims 12-13, 23-24, and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Harrow et al.** (U.S. PGPUB 2003/0009518) as applied to claims 30, 33, and 37 in view of **Dutta et al.** (U.S. PGPUB 2003/0050966) as applied to claims 1-9, 16-21, 25-29, 31-32, 28, and 41-42, and in view of **Dar et al.** (U.S. PGPUB 2003/0154236) as applied to claims 11, 22, and 34-36, and in view of **Eldreth** (U.S. Patent 6,292,800).

16.   Regarding claim 12, **Harrow, Dutta**, and **Dar** do not explicitly teach a system comprising:

A) wherein the file also has associated therewith a flag to indicate status of the file.

Eldreth, however, teaches **"wherein the file also has associated therewith a flag to indicate status of the file"** as "the status field provides additional details on a requested database operation" (Column 5, lines 22-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Eldreth's** would have allowed **Harrow's, Dutta's**, and **Dar's** to provide a method to for

simplified database access and increased service availability, as noted by **Eldreth** (Column 1, lines 61-64).

Regarding claim 13, **Harrow**, **Dutta**, and **Dar** do not explicitly teach a system comprising:

A) wherein the flag indicates at least one of whether the file is being written, is ready to be read, is being read, and is available to be deleted.

Eldreth, however, teaches "**wherein the flag indicates at least one of whether the file is being written, is ready to be read, is being read, and is available to be deleted**" as "the status field provides additional details on a requested database operation...Result OK" (Column 5, lines 22-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Eldreth's** would have allowed **Harrow's**, **Dutta's**, and **Dar's** to provide a method to for simplified database access and increased service availability, as noted by **Eldreth** (Column 1, lines 61-64).

Regarding claim 23, **Harrow**, **Dutta**, and **Dar** do not explicitly teach a system comprising:

A) wherein the file also has associated therewith a flag to indicate status of the file.

Eldreth, however, teaches "**wherein the file also has associated therewith a flag to indicate status of the file**" as "the status field provides additional details on a requested database operation" (Column 5, lines 22-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Eldreth's** would have allowed **Harrow's**, **Dutta's**, and **Dar's** to provide a method to for simplified database access and increased service availability, as noted by **Eldreth** (Column 1, lines 61-64).

Regarding claim 24, **Harrow**, **Dutta**, and **Dar** do not explicitly teach a system comprising:

A) wherein the flag indicates at least one of whether the file is being written, is ready to be read, is being read, and is available to be deleted.

Eldreth, however, teaches "**wherein the flag indicates at least one of whether the file is being written, is ready to be read, is being read, and is available to be deleted**" as "the status field provides additional details on a requested database operation...Result OK" (Column 5, lines 22-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Eldreth's** would have allowed **Harrow's**, **Dutta's**, and **Dar's** to provide a method to for simplified database access and increased service availability, as noted by **Eldreth** (Column 1, lines 61-64).

Regarding claim 39, **Harrow**, **Dutta**, and **Dar** do not explicitly teach a system comprising:

A) providing a flag associated with the results to indicate whether the results are ready to be read by the query provider.

Eldreth, however, teaches "**providing a flag associated with the results to indicate whether the results are ready to be read by the query provider**" as "the status field provides additional details on a requested database operation...Result OK" (Column 5, lines 22-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Eldreth's** would have allowed **Harrow's**, **Dutta's**, and **Dar's** to provide a method to for simplified database access and increased service availability, as noted by **Eldreth** (Column 1, lines 61-64).

Regarding claim 40, **Harrow**, **Dutta**, and **Dar** do not explicitly teach a system comprising:

A) providing a flag associated with the results to indicate whether the results have been read by the query provider.

Eldreth, however, teaches "**providing a flag associated with the results to indicate whether the results have been read by the query provider**" as "the status field provides additional details on a requested database operation...Result OK" (Column 5, lines 22-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Eldreth's** would have allowed **Harrow's**, **Dutta's**, and **Dar's** to provide a method to for simplified database access and increased service availability, as noted by **Eldreth** (Column 1, lines 61-64).

16.   Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Harrow et al.** (U.S. PGPUB 2003/0009518) as applied to claims 30, 33, and 37 in view of **Dutta et al.** (U.S. PGPUB 2003/0050966) as applied to claims 1-9, 16-21, 25-29, 31-32, 28, and 41-42, and in view of **Garimella et al.** (U.S. PGPUB 2005/0015415).

17.   Regarding claim 43, **Harrow** and **Dutta** do not explicitly teach a system comprising:

A) wherein the first connection is a Local Area Network; and

B) wherein the second connection is a Storage Area Network

Garimella, however, teaches "**wherein the first connection is a Local Area Network**" as "LAN" (Figure 1) and "**wherein the second connection is a Storage Area Network**" as "SAN" (Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Garimella's** would have allowed **Harrow's** and **Dutta's** to provide a method to improve coordination of volume access operations to avoid conflicts and corruption problems when multiple devices have access to the volume over a network, as noted by **Garimella** (Paragraph 7).

Response to Arguments

18. Applicant's arguments with respect to claims 1-14, and 16-43 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

19. The prior art of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. PGPUB 2002/0083120 issued to **Soltis** on 27 June 2002. The subject matter disclosed therein is pertinent to claims 1-14, and 16-43 (e.g. methods to use and operate storage networks and file distribution).

U.S. PGPUB 2002/013359 issued to **Monday** on 19 September 2002. The subject matter disclosed therein is pertinent to claims 1-14, and 16-43 (e.g. methods to use and operate storage networks and file distribution).

U.S. Patent 5,950,203 issued to **Stakuis** on 07 September 1999. The subject matter disclosed therein is pertinent to claims 1-14, and 16-43 (e.g. methods to use and operate storage networks and file distribution).

U.S. PGPUB 2003/0208621 issued to **Bowman** on 06 November 2003. The subject matter disclosed therein is pertinent to claims 1-14, and 16-43 (e.g. methods to use and operate storage networks and file distribution).

U.S. PGPUB 2004/0044727 issued to **Abdelaziz** on 04 March 2004. The subject matter disclosed therein is pertinent to claims 1-14, and 16-43 (e.g. methods to use and operate storage networks and file distribution).

U.S. Patent 7,089,301 issued to **Labio et al.** on 08 August 2006. The subject matter disclosed therein is pertinent to claims 1-14, and 16-43 (e.g. methods to use and operate storage networks and file distribution).

U.S. PGPUB 2003/0158839 issued to **Faybishenko et al.** on 21 August 2003. The subject matter disclosed therein is pertinent to claims 1-14, and 16-43 (e.g. methods to use and operate storage networks and file distribution).

U.S. PGPUB 2004/0044727 issued to **Abdelaziz** on 04 March 2004. The subject matter disclosed therein is pertinent to claims 1-14, and 16-43 (e.g. methods to use and operate storage networks and file distribution).

Contact Information

20.   Any inquiry concerning this communication or earlier communication from the examiner should be directed to Mahesh Dwivedi whose telephone number is (571) 272-2731. The examiner can normally be reached on Monday-Friday 8:00 AM-4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached at (571) 272-3642. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mahesh Dwivedi
Patent Examiner
Art Unit 2168

April 10, 2007

Leslie Wong
Primary Examiner